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ABSTRACT

Preservice teachers enter formal studies of teaching with an array of personal history-based beliefs and about teaching, classrooms, and students. This report traces the interactions between preservice teachers' personal history-based lay knowledge and their decisions about the potential value of coursework-based principles of content area reading instruction. Preservice teachers countered professional, production arguments favoring direct instruction about reading processes with their own personal history-based practical arguments. Math and English majors rejected rationales for process-centered instruction for reading in each of their respective content areas and offered subject matter-specific defenses for traditional presentational formats. This document analyzes the quality and character of these arguments and proposes classroom strategies that teacher educators might use for gaining access to and a voice in preservice teachers' internal, decision-making dialogues. (Author)

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Practicing What We Teach

Diane Holt-Reynolds

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PRACTICING WHAT WE TEACH

Diane Holt-Reynolds

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Abstract

Preservice teachers enter formal studies of teaching with an array of personal history-based beliefs about teaching, classrooms, and students. This report traces the interactions between preservice teachers' personal history-based lay knowledge and their decisions about the potential value of course work-based principles of content area reading instruction. Preservice teachers countered professional, production arguments favoring direct instruction about reading processes with their own personal history-based practical arguments. Math and English majors rejected rationales for process-centered instruction for reading in each of their respective content areas and offered subject matter-specific defenses for traditional presentational formats. This report analyzes the quality and character of these arguments and proposes classroom strategies that teacher educators might use for gaining access to and a voice in preservice teachers' internal, decision-making dialogues.

PRACTICING WHAT WE TEACH

Diane Holt-Reynolds[1]

Teacher education holds ironies that I suspect are absent in the education of other professionals. Because we are teachers of teachers, the principles we study, value, and carefully submit to our students as fundamentals of good practice have a way of doubling back on us. Consider, for example, the principle of good instruction which suggests that, when introducing students to new material, it is critical for teachers to link that new material with students' existing knowledge of the subject (see Anderson, 1977; Rumelhart, 1980). This principle posits that some form of prior experience with the material is valuable—even essential—for learners who must come to understand a new novel, theorem, or historical attitude. The principle suggests that good teachers should, therefore, work hard to help students access relevant existing schema or build a prerequisite knowledge base.

I am keenly aware—often uncomfortably aware—of the recursive nature inherent to my argument as I broach this principle with preservice teachers. Like a woman who stands between parallel mirrors and sees her reflection reflected back on itself in an infinity of progressively diminishing images, I ask myself whether I have acted according to the principle I am advocating. For even as we objectify and discuss the importance of the prior knowledge that high school students bring to the study of art, literature, math, science, and history, we cannot cease to function simultaneously as subjective participants in an episode of teaching. The abstract, "scientific" content of our lesson—the importance of prior knowledge—must have its living, experiential counterpart in the acting out of our teaching/learning event. The preservice teachers in my classroom who sit "studying" schema theory must certainly be using their own schema as a resource for that study. They come to class carrying prior knowledge about the concept of prior knowledge. So I ask myself, "Do I know what they already believe that might be relevant to our study of this particular principle? Am I practicing what I am teaching? We are, after all, always a teacher and a group of students. Do not the principles we are discussing apply to us as well?"

Of course the prior experiences of teaching and learning that compose the personal histories of the students of teaching who are sitting before me matter. The irony of the situations deepens to embarrassment, however, as I acknowledge to myself what I truly suspect—that their prior knowledge will somehow be less than helpful for their understanding of the principles I am eager to share.

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[1]Diane Holt-Reynolds, assistant professor of teacher education at Michigan State University, is a senior researcher with the National Center for Research on Teacher Learning

Students of teaching indeed come to their formal studies of teaching with powerful, personal history-based (Knowles & Holt-Reynolds, in press) lay theories (Holt-Reynolds, 1990a) about good practice. Lay theories, beliefs developed "naturally" over time without the influence of instruction (see Vygotsky, 1978), are not consciously "learned" at an announced, recognized moment from a formal teaching/learning episode. Lay theories are, instead, tacit knowledge lying dormant and unexamined by the student (see Barclay & Wellman, 1986). Developed over long years of participation in and observation of classrooms (Lortie, 1975) and teaching/learning incidents occurring in schools, homes, or the larger community (Measor, 1985; Sikes, 1987), preservice teachers' lay theories are based on untutored interpretations of personal, lived experiences (see Bullough, Knowles, & Crow, 1989; Knowles, 1989).

Therefore, communicating the abstracted, "scientific" principles of professional practice to students of teaching is qualitatively unlike communicating the abstracted principles of any other profession (Feiman-Nemser & Buchmann, 1986; Zeichner, 1983, 1986). Unlike students of the medical or law professions to which the professional preparation of teachers is often compared, preservice teachers enter programs of professional study with a quantity of knowledge about schools, classrooms, and pedagogical practices. They come with lay beliefs about what "works" with students and therefore constitutes "good" practice and with volumes of personal experiences in the form of narratives about teachers, teaching, classrooms, and subject matter-specific pedagogies (see Clandinin, 1985; Connelly, 1986; Elbaz, 1981). They are, in effect, "prepared" to make sense out of the subject matter of teaching. They already possess quantities of experience-based information on virtually every topic or concept we plan to teach.

It is entirely possible that these personal history-based lay theories will indeed act as helpful schemata which preservice teachers can expand as they pursue their formal studies of teaching. There are, however, times when students' lay concepts are not quite valuable and helpful so much as they are powerful and potentially dysfunctional as resources for learning the principles we hope to teach. Science in general (Roth & Anderson, 1988) and physics in particular (DiSessa, 1982; Holland, Holyoak, Nisbett, & Thagand, 1986) are areas where students' prior experiences of living and constructing meaning out of those experiences can lead to lay theories that are both tenacious and highly resistant to instruction. They are often not even identified by the student as theories at all until, as part of the process of formal study, they appear as if in relief against the solid, explicit background of "scientific" knowledge or theory. It is, therefore, altogether possible that at least some of preservice teachers' lay theories may function as barriers to their development

of the abstract principles of teaching which form the content of their formal studies (Bullough, 1990; Hollingsworth, 1989; Holt-Reynolds, 1990a; Knowles, 1988, 1990).

Ideally, this should not be the case. Given that preservice teachers base their lay beliefs on interpretations of actual experiences as students in classrooms and given the many generations of teachers we have credentialed through formal teacher education programs, we should logically be able to expect that the classroom-based experiences of teaching and learning that our students have used as data upon which to build their lay theories of teaching would produce lay theories that approximate the professional knowledge base we intend to teach. We should be able to assume that all this experience-based knowledge preservice teachers have collected will smooth the way for new learning; will provide positive, accessible connections we can use as a bridge to the formal, research-based principles we are eager to explore with our students; will help them to personalize the abstractions we often ask them to master; and will help them develop professional insight more quickly.

Even limited observation of classroom practices, however, suggests that such assumptions are unwarranted (Ravitch, 1985). New teachers leave our universities and, for a wide range of documented reasons, develop classroom practices which do not implement the principles so carefully taught and which they evidently mastered during their sojourn at the university (Hollingsworth, 1989; Hoy, 1969; Knowles & Hoefler, 1989; Zeichner & Tabachnick, 1981).

In a concerted effort to understand more clearly the potentially helpful character or dysfunctional quality of the knowledge that the preservice teachers with whom I work bring to our formal study of teaching, I talked at length with nine preservice teachers about the course work with which they were engaged. In the process, I was able to document (a) the lay theories they had developed out of their personal history-based experiences, (b) the decisions they made about the potential value of the principles of good instruction which they encountered as part of that course, and (c) the relationships, as expressed in practical arguments defending their decisions, between their personal history-based beliefs and those decisions.

I came away from those interviews impressed with both the transforming power of preservice teachers' lay concepts and the coherence of the practical arguments (Fenstermacher, 1986) that those preservice teachers had built out of their lay concepts. I came away sobered as I realized that we cannot assume that preservice teachers' lay beliefs will act as facilitating factors in their studies of teaching. The prior, experience-based knowledge that preservice teachers bring with them to their study of teaching constrains as

much as it illuminates, prejudices even as it colors, and short circuits as often as it leads to fresh insight. I also came away eager to explore ways of teaching preservice teachers that would respect their arguments, cooperate with their processes for making sense out of experiences, and provide options for reconsidering and reshaping their arguments.

The first part of this report chronicles the practical arguments nine preservice teachers offered in counter evidence to the professional or production arguments (see Fenstermacher, 1986) extended by the instructor of their content area reading course. While many instructional principles were explored through that course, I have chosen to present and analyze only preservice teachers' responses to those principles which advocated substituting directed reading activities, direct instruction in the reading process, and writing to learn activities for traditional, frontal, teacher-as-teller modes of instruction. I explore in depth specific lay theories of subject matter, lay projections of high school students' abilities as readers, and lay beliefs about teachers' subject matter-specific roles as disseminators of information. The second part of this report provides an analysis of the character and quality of the interaction between these preservice teachers' lay beliefs and their decisions about student-centered, process-oriented instructional strategies. Based on that analysis, this report suggests five broad principles of pedagogy for preservice teacher education.

Practical Arguments: Personal History-Based Beliefs Meet Professional Theories

Content area reading courses are predicated on the principle that teachers need to mediate discrepancies between students' abilities as readers and the demands inherent to text in order to help students learn from texts and become independent learners in a content area. Jim Barnett,[2] the instructor for the course, devoted a major portion of class time to the development of this theory, defining and illustrating "text demands," redefining "reading" as "understanding," challenging those enrolled about the value of teacher-led discussions/lectures, and inviting them to participate first hand in writing-to-learn activities both as in-class and out-of-class assignments. He invited guest lecturers from a variety of content areas including English and math to speak about how they incorporated direct instruction in the reading process into their subject matter curriculums.

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[2]Names used are pseudonyms.

The Professional Argument For Change

Barnett's course in content area reading was, in essence, one extended argument for the adoption of student-centered, process-focused, constructivist practices in subject matter secondary classrooms. He repeatedly questioned the value of teacher-telling (i.e., lectures) as instructional tools for fostering students' growth as independent learners.

Barnett centered his argument around two premises. First, he argued that many, if not most, high school students have difficulty negotiating high school textbooks and therefore are not skilled at using reading as a way to learn. Second, he argued that, while frontal modes of instruction, like lecturing, effectively bypass texts for students and so make the information contained in those texts accessible to them, teachers' telling of content actually does little to help high school students become more skillful readers or independent learners. He argued that students are passive while teachers lecture or engage in other forms of teacher-telling and that this passive state is undesirable. Instead of helping students through difficult text, Barnett maintained that teacher-telling allows at best and facilitates at worst high school students' tendencies to circumvent text. Throughout the course, Barnett recommended writing and small-group, peer-led discussions as activities teachers could substitute for more frontal modes. He advocated these alternatives using the rationale that these methods could invite students' active participation in their own learning.

Preservice Teachers' Defense Of Current Practice—The Lecture Format

Barnett's arguments were not accepted by the nine preservice teachers with whom I talked. While most accepted writing-to-learn activities and small-group, peer-led discussions as occasional additions to traditional formats and some preservice teachers were in fact quite excited about these instructional tools, no one regarded them as appropriate substitute formats for traditional teacher-as-teller, lecture formats. Their practical arguments for accepting these strategies on even a limited basis did not match or mirror Barnett's production arguments and rationales. Therefore, the actual decisions these preservice teachers made regarding the potential value of these instructional strategies are not as important as are the practical arguments they gave to defend their decisions to maintain lecture formats in their future teaching.

It is important to remember in reading these arguments that each is predicated on lay, personal history-based conceptualizations for "good" teaching, "good" subject matter classrooms, and "good" student capabilities. Drawing on personal experiences of schooling, home, and community, these preservice teachers had developed attributional beliefs about what teacher behaviors were causal to the successes, failures, and memorable incidents in

their previous histories as students (Holt-Reynolds, 1990a, 1990b; Knowles & Holt-Reynolds, in press) long before they arrived in Barnett's classroom. Their practical arguments in defense of lecturing formats provide, therefore, a window to those lay concepts and give us a view of the interaction of lay, personal history-based concepts with professional concepts of "good" teaching.

Listening is active. All nine preservice teachers reacted quite positively to the idea that teachers should get students actively involved. They absolutely, unequivocally agreed with Barnett on that point. No one tried to argue that passivity is desirable or even merely unavoidable. However, these preservice teachers did not share Barnett's definitions of the terms "active" and "passive."

No one accepted Barnett's argument that listening is a passive event for students. They countered that argument by explaining the connections they saw between listening and thinking. Dave's argument is a good example. "If [students] are listening and thinking about it while they are listening, then they are learning. A good student is going to be thinking the [math] problems out on his own [during a lecture]." As a group, these preservice teachers agreed with the position Dave's comment illustrates. They argued that thinking is indeed active and that, therefore, listening will not be passive if students think while they listen. Will defined the differences between active and passive learners.

> Passive means not following a lecture, not trying to understand. Active means thinking about the topic. A lot of students do just sit there, but a lot of students may be thinking, trying to understand what the teacher is presenting. The active student is trying to learn more.

Will's comment underscores Dave's point but also suggests that the question of whether students are active or passive learners does not rest so much on the format a teacher employs as it does on qualities inherent to students—their motivations to be active. According to Will, lecturing itself does not "make" students passive.

Interested students will listen actively. Several other preservice teachers echoed Will's premise. They characterized students' responses to lectures as overt decisions that students make about whether they will be active or passive during a lecture. They attributed students' decisions to students' interest in the topic. Jude's explanation was typical.

> When teachers are lecturing, I can either sit there actively objecting to that fact or actually thinking about what they're saying. It doesn't necessarily mean that I shut off. I think [passive] means [students] are not engaged. Engagement can come in all forms, and one of them is sitting there

> day-dreaming about what the teacher is talking about, something the students have an interest in.

According to Jude, students' interest will be the key, decisive element in a lecture/listen instructional format. He expressed the belief that interested students will think about what the teacher is saying during a lecture and so be "actively" involved with the subject matter.

Jude's belief was widely held among preservice teachers in this study. Beth and Charlie both expressed similar beliefs connecting students' interest to students' engagement during a lecture. "Sometimes [students] are formulating questions about what they are thinking. But somebody who is not interested in math might not do that" (Beth). "If it's a good lecture, [students] aren't passive. They are involved and really interested in what's going on in the lecture, and it's stimulating something in their mind and making me think about a lot of things" (Charlie).

Clearly, these preservice teachers did not accept Barnett's link between lecturing and passivity. Jane and Corinne went so far as to offer explicit examples of how active students could be when listening to lectures. "When teachers are lecturing, students can ask questions and participate" (Jane). "[When] students are taking notes or listening, that's not passive. Listening is active" (Corinne). They believed that listening can constitute active participation because listening can involve thinking, taking notes, asking questions, and working examples silently and privately but along with the teacher's oral explanation. They linked the degree of student participation to interest in the lecture's content, not to an inherent feature of the lecturing format. They believed that, if students are interested and/or the lecturer is interesting, students will be actively engaged with the material.

The belief that interest, excitement, or having fun will be the key instructional element of concern—perhaps the only concern—when teachers hope to foster learning was a powerful one. All nine preservice teachers believed that "interestingness" would be the most important attribute of instruction (see Holt-Reynolds, 1990b). All nine talked about the positive correlation between students' interest in a subject or a teacher and students' effort to learn. And all nine had developed that belief based on their interpretations of their experiences as students in classrooms: "You get more out of things that you're more excited about than something you dread doing" (Corinne); "You pay more attention to teachers that are doing what you are really interested in. [Students] may pick up [information] in my class because [they] are interested" (Jeneane); "I think the interest part goes with understanding. Some [students] can understand without being interested, but I think it does make it easier for a student to understand if they are interested in the topic"

(Will); and "If students are interested in a topic, they'll pay more attention to it. They'll get more out of it" (Beth).

Arguing that students' levels of active engagement are tied to their levels of interest did not negate Barnett's premise about the importance of active engagement. These preservice teachers agreed with him there. Their argument simply located the causes of passivity in students' interest or lack of it rather than in a particular instructional format. These preservice teachers did not, however, accept the corollary that students' roles during lecture are inherently passive ones. They countered by offering definitions of active participation that included thinking, silent monitoring, "following" the talk, note taking, and interrupting the lecture to ask questions. They defined "passive" as synonymous with "bored" or "not interested." These definitions of terms paved the way for them to defend lecturing itself as valuable.

Lecturing is necessary given specific subject matter. With the issue of passivity comfortably resolved, these preservice teachers responded to Barnett's premise about the importance of helping students become independent readers of texts. No one asserted that students' independence was not a goal. Instead, they raised arguments reflecting their beliefs about the likelihood of achieving this goal given the nature of the subject matter they intended to teach.

Jane talked about the importance of teacher-telling in a subject-matter specific context:

> In history, I'm sorry. It's just not going to come out of them. I'm going to have to lecture—I don't think that's bad. I don't like history books for high school. They're usually boring. I would be tempted to throw out the textbooks, have [students] read primary sources, and then have me tell them the rest.

Jane was concerned about whether, in history, students would be able to learn independently. She did not value textbooks as sources of information. Rather, she saw them as supplementary to teacher-telling. Consequently, Jane saw little reason to foster students' independent use of textbooks—a goal Barnett advocated. Since Barnett's premise defending the replacement of lecturing formats with strategies to help students become independent learners hinged on his assumption that fostering independence is both valuable and possible, his entire argument was vulnerable to counter logic like Jane's.

Dave believed it would be unlikely that students could learn math independently since "math is sequential in nature." This belief formed the premise he used to build his argument for a link between "good" teaching and lecturing.

> You just have to tell [students] the next step. Some [steps] they are not going to discover on their own if you give them a lifetime. That's where you give it to them. I think it's better to teach slow and let them figure it out by themselves, but it's not practical at all. You do have to cover the material.

Beth and Will agreed with Dave on this point. All three math majors argued that learning math is easier if a teacher lectures rather than if a teacher requires students to learn math by reading the textbook. "The textbooks are so difficult that it's easier to [lecture]. The kids can't ask a book a question. [If] you are lecturing, they can raise their hand, and you can answer" (Dave). In effect, they argued that learning math is more important than learning how to learn math:

> Lecturing can help students, especially in math class. You wouldn't want 100 percent lecture, but I still think it helps. I know I do a lot better in my math classes if I have somebody lecturing to me about what I've been reading. (Beth)

Will too connected the nature of learning from texts in math classrooms to a need for some form of teacher-telling. "Considering the texts [math classes] use, [lecturing] is almost needed—to talk the course. I'm not saying this is the best way to do it, but it is about the only way" (Will).

Reading and certainly writing and discussing are not traditional elements of math classes. When these math majors consulted their own experiences as students, they remembered having difficulties learning independently from math textbooks. All three math majors realized the demands of math texts, but none accepted Barnett's strategies for mediating math texts. All three math majors, therefore, readily agreed with Barnett's prediction that their students would have great difficulty reading math textbooks and learning math from that reading.

They disagreed, however, about how "good" teachers should mediate the difficulties of texts with students. All three insisted that it is in fact the very difficulty of math textbooks that has made math classes the way they are today. All came to their study of content area reading carrying pictures of classrooms where lecturing served a mediational role and dominated. On four occasions in three different interviews Beth explained that

> [math] has been work on problems, work on problems, and work on the problems some more. The teacher says, "Read this section tonight, and we'll discuss it in class tomorrow." No one reads the section. They come to class, and then the teacher teaches them how to do it, and you go wor: :n more problems.

Will agreed explaining that "to get the best educational experience, you have to go through and work with a student by lecturing or just discussing the problems." Dave recalled that "we sat in class and got lectured at. [There was] a question period and then there was homework." Dave went on to say that he expected his own teaching to follow this pattern "with some added spices" to keep students "interested."

Since all three had been remarkably successful students in that context, it is little wonder that they interpreted their experiences positively. Lecturing had "helped" them learn math; therefore, they saw lecturing as somehow inherently connected to the nature of math as a discipline.

They also all talked about the sequential nature of math. Only Dave clearly explained how he believed this might affect his teaching.

> I can't see how you have kids help each other with math like writing. For math, it's [that] you just keep building. You rarely come up with the next step by practice. You need someone to be telling you things in the lectures. The teacher tells you—or makes you think you are learning it yourself.

The meaning that Dave gave to his recognition of the sequential nature of math is important to understand. He believed that math is not only sequential but that the steps of the sequence do not suggest themselves to students of math. "The teacher gets up there, teaches it, and it's a lot more efficient than having [students] read it on their own. It's just really difficult to learn math on your own." Dave saw math as something difficult or impossible to discover. He saw learning in math as a direct result of teacher-telling. Not even text-telling would be helpful in Dave's belief system.

While neither Beth nor Will were as forceful on this point as Dave, all three math majors shared the belief that math must be told to learners. No one believed that students could become self-directed learners able to read texts independently *in math*. Barnett's attempts to offer strategies for making learners independent of teachers were complicated and to a large degree thwarted by the preservice math teachers' beliefs about subject matter-specific pedagogy (see Shulman, 1986). These beliefs were not replaced by Barnett's arguments. Therefore, lecturing remained the only mediation they saw as effective.

Lecturing motivates students' interest in literature. All nine preservice teachers, math majors and English majors alike, agreed that reading *math* textbooks without teacher aid would be difficult and unproductive for students. The math majors argued that, therefore, lecturing would be a necessary mediational strategy. The six English majors reached the same conclusions about the necessity of lecturing in English classrooms, but their arguments defending their subject matter-specific need for lecturing differed from those of the math majors.

All nine were remarkably optimistic about students' abilities to read *literature* analytically and relate it to their lives. "English textbooks, I think, are fine without help. You could get something out of it" (Beth, math). "You can get things out of [literature]. Plots are easy to read. You might miss all the symbols and themes" (Dave, math). "Literature anthologies are intended for students to read on their own. I could handle reading an anthology when I was in high school" (Lauren, English). "A novel is something you can pick up for pleasure. I don't think most authors intended for everyone to have a mentor with them while they read their book" (Jude, English).

These preservice teachers obviously underestimated the potential difficulties high school readers will have reading literature at even the literal level. The arguments Jeneane, Charlie, and Lauren—all English majors—used subsume the others' positions.

> Most kids really know what's going on today. They read the paper; they watch the news and all of these talk shows. Now they just [need] to read [literature] and see how that knowledge applies. As difficult as that sounds, I really don't think it is. (Jeneane)

> [Students] can [analyze literature], but I'm not sure they know they can. I think once you read something, you have an opinion about it. I guess younger students don't realize that's analysis. (Charlie)

> I think [students] analyze [literature] on their own without really knowing they are doing it. If it's like *Catcher in the Rye* where the guy is really depressed, that's something they would be able to make a connection with. (Lauren)

Barnett based the rationale for adopting reading support strategies instead of frontal lecturing strategies on the assumption that students need that support. The English majors held belief systems that were in direct opposition to Barnett's. They believed that students are actually quite competent as readers but that teachers do not give them credit for that competence. Therefore, not only could they not see a need for supporting students' reading,

they logically were uncomfortable even considering the possibility. They were operating under a belief system that said, "Good teachers believe that their students are competent." Since Barnett based the explicit use of or instruction about reading strategies on the argument that students will require help, the belief system that these English majors had constructed became dysfunctional for their evaluation of reading support strategies. Minus the argument that students need reading support rather than additional, teacher-based information about texts, Barnett's rationale for eliminating the lecture as an instructional format was weakened.

Since the English majors in this study believed that students' difficulties with reading literature texts would be minimal, they argued in defense of the lecture as a motivational tool, as a way to "infuse" their own personalities into a reading of a common text.

> Lectures help students learn because they infuse the teacher's personality and unique knowledge into the subject matter and make it possible for students to ask questions directly of the lecturer. They can't ask questions of their book. . . . Lecturing *is* a way to mediate between readers and texts. . . . If [students] are reading a passage on Shakespeare and it tells some boring things, I could probably make it more interesting and more memorable if I told them or acted it out. (Jane)

Jane's revision of Barnett's argument reflected her dual beliefs that (a) teacher-telling personalizes the material or makes it interesting and (b) lecturing provides a more active response for students than reading. In her comment, we see once again that keeping students' interest was an important consideration for everyone in this study. We also see again the assumption that teachers can provide interestingness via lectures. This state or quality of interestingness will then produce an instructional benefit. Jude also argued for lecturing on the same general basis as had Jane. "'Talking the course' is a way of making it come alive, of mediating for students" (Jude).

Lecturing demonstrates subject matter expertise. These preservice English teachers used one additional argument to defend the practice of lecturing. They believed that lecturing would "prove" that they are subject matter experts. Jane made this point explicitly.

> [Barnett] doesn't value lectures as a way to share information. He thinks people should be able to get it for themselves and not be fed it. I don't think that lectures are [spoon] feeding—I mean, why am I going to school for four years and studying English if I can't tell them anything I've learned from it? I am a source of knowledge. I would think I would be at least as valuable as a textbook. (Jane)

Jane apparently conceived of knowledge as a body of information and of teachers' roles as transmitters of that information. Barnett's arguments assumed a conceptualization of knowledge as something constructed in the interactions of learners with texts, writing, and peers. Barnett assumed an epistemology that Jane did not share.

Lauren struggled with this same issue. "They're going to think you're dumb if you don't know it off the top of your head, so I decided that there's perspective that you're putting in there that they can't get from the books." Lauren was concerned about appearing knowledgeable to her students. "Good teachers" know their subject matter. And they "prove" their knowledge by lecturing.

"Good" lectures vs. "bad" lectures. Just as the preservice teachers who spoke with me did not share a definition of "active" and "passive" with Barnett, neither did they share his definition of "lecture." Barnett used the term as synonymous with teacher-telling. He defined any teacher action as "lecturing" if its primary purpose was the direct transmission of previously constructed information. Barnett therefore included question-answer-evaluation formats as "lecturing."

While these preservice teachers accepted that teachers' talk-to-transmit-information was indeed a "lecture," they recognized formats where teachers ask questions, students volunteer answers, and teachers evaluate those answers as "discussions," not as lectures. Distinguishing between types of lectures, they considered some lectures or uses of lecturing "bad" while other types and reasons for lecturing might be "good."

> Discussion with the teacher is okay. If you talk to [students] while you're giving them information, and they feel free to ask questions if they don't understand, that makes things comfortable. (Lauren)

During interviews with high school students, Lauren had been told with impressive regularity how much they disliked "straight" lectures. These sorts of lectures Lauren believed were, therefore, "bad" since students so universally reported to her their dislike of them. But "discussability lectures" were "comfortable," and Lauren planned to use them.

Charlie saw lectures as useful formats to "pass out" and so transmit information. "I don't necessarily think [lectures] are the best techniques or ones that should be used five days a week, but I think they can be very helpful to pass out a lot of information in a short time." Actually, the teacher-as-transmitter metaphor was rare in Charlie's language. His comment here is useful because he included a qualification on "good" lecturing that was common to others in this study. They believed that lecturing is valuable but only if it is used in moderation.

"It depends on how much you do." Corinne went on to explain why she believed that only limited amounts of lecturing would be valuable. Notice how she built her argument around her belief that holding students' interest is an important teacher behavior:

> If you *only* use [lecturing], then of course it's going to do little to help students learn because they're going to become bored. . . . [Lecturing and independent reading] are both fine if you don't over use them because then students get bored.

"Either one is fine." It was the *variation* of formats that Corinne valued. She saw nothing inherently more valuable in student-centered activities or inherently more limiting to lecturing. But sameness could cause "boredom," and interest, she believed, would be the vital element to good teaching.

Several preservice teachers argued for only a limited use of lecturing based on a belief that sameness in and of itself would be undesirable. Like Corinne above, they believed in the inherent value of variation. Jeneane used this belief as part of her rationale for minimizing her use of lecturing.

> [Students] go through 13 years of schooling, and a lot of it is lecturing or telling. If there is one class where teachers do something out of the ordinary, I think that can really aid a student in learning.

This is the full extent of Jeneane's argument. She did not add that lecturing should be avoided because students are passive and uninvolved with making meaning while teachers lecture. Her rationale may produce a classroom where lecturing is seldom done; however, her practical argument for her practice tied learning to the state of being different. Others shared her belief that "differentness" will have inherent value in their classrooms. "I got the feeling that [students] would like [my final project]. They would think it was different" (Corinne). "[Students] would enjoy [my final project] if they could get into it. It's better than just the same thing all the time. It's good to shake [students] up a little bit" (Jane). The net effect of the arguments presented in defense of lecturing was to redefine this questionable teacher behavior in a way that would leave many of its forms outside the debate. Lauren, Corinne, Jane, and Charlie all carefully qualified their rejection of the lecture format leaving many forms of teacher-telling available to themselves.

As did Charlie and Corinne, Lauren believed that quantity of use determined, at least in part, whether lecturing might be a "good" teacher thing to do. In our final interview, she

revised one of Barnett's statements to read as follows: "Lecturing and other forms of teacher-telling do little to help students learn if that's all they do and the students have no input." Lauren believed that a lecture would "mediate" a Shakespeare text for students by "giving them the history and where Shakespeare was from," and she defended her planned use of this lecture in part by invoking Barnett's argument for the need for text mediation with students.

Of course, telling students information about an author's life would not have met Barnett's definition of mediating a text by any stretch of imagination. Lauren, however unintentionally, subverted Barnett's rationale calling for purposeful mediation of text to serve her argument defending lecturing as an instructional format. In so doing, she effectively negated her apparently positive reaction to the principle of text mediation—a principle based on the assumption that good teachers help students become independent readers of text—by coupling it to an instructional strategy—the lecture—which assumes that good teachers transmit information to students. Lauren's final argument is a teacher educator's worst nightmare.

An Analysis: Thematic Issues In Preservice Teachers' Practical Arguments

The specific arguments these nine preservice teachers shared for defending their decisions to include lectures of some type in their future teaching repertoire are important in their own right. Their arguments are coherent, cohesive, and clearly grounded in their personal histories. By exploring the specific arguments preservice teachers use for supporting their decisions about the potential value of specific principles, we stand to learn much about the effects of the production arguments we use as we attempt to establish the importance of the principles we hope to teach. As in all well-argued debates, each side learns more about its own point of view by listening carefully to the strategic arguments of the opposition. Certainly it is possible to read the practical arguments here and, working inductively, discover in them a better strategy for recommending student-centered, participatory, process-oriented teaching formats to preservice teachers.

Since, however, it is my intention to use this set of practical arguments as a case out of which to begin to build a corresponding set of principles for teaching preservice teachers, what follows here is not so much an analysis of these specific arguments as an analysis of what these arguments tell us about the character and quality of the beliefs and lay concepts preservice teachers are likely to bring to their formal studies of teaching.

The Character of Preservice Teachers' Lay Beliefs

Preservice teachers' arguments are typically generalizations based on references to themselves in the role of students (Knowles & Holt-Reynolds, in press). Those cited here are certainly no exception. Over and over, these preservice teachers referenced themselves to prove their point or to illustrate it. A brief review of a few examples will serve to illustrate this phenomenon. "I know I do a lot better in my math classes if I have somebody lecturing to me . . ." (Beth). "We sat in class and got lectured at" (Dave). "I could handle reading an anthology when I was in high school" (Lauren).

In each of these statements, the speaker went on to use herself or himself as a prototype upon which to build a generalized principle or premise. Charlie's statement cited earlier is perhaps the most dramatic example of how easily preservice teachers dip into their own experiences for data with which to support an argument. Note the shift Charlie makes from the objective pronoun "they" to the personal, subjective pronoun "me" to prove his opening, generalized premise:

> If it's a good lecture, [students] aren't passive. [They aren't passive when] *they* are involved and really interested in what's going on in the lecture and it's stimulating something in *their* mind and making *me* think about a lot of things.

Charlie was not only talking about students in general or even his own future students; he was recalling his perceptions of his own experiences while teachers lectured. When he was interested in a lecture, his reactions to it seemed qualitatively different from his reactions to a lecture in which he was not so interested. Using this perception as if it were prototypical, unquestionably accurate, and universally generalizable, Charlie went on to link passivity to boredom rather than to the relationship between learners and subject matter inherent to lecture modes.

Although Charlie's statement is especially easy to use as an illustration, he was in no way an isolated case. Each of these preservice teachers used their interpretations of their own experiences in classrooms as data upon which to build predictions about how their future students would react. None of these preservice teachers believed that students are passive during lectures because the principle seemed to violate their own experiences as students during lectures.

The practical arguments presented here are identical in character. All were based on beliefs these preservice teachers had established long before Barnett approached them. The beliefs in turn had been constructed based on interpretations these preservice teachers had made about critical events from their own histories. None of these preservice teachers

questioned the links they had established between their own reactions as students and the features of a teacher's presentation or personality they had attributed as causal to that reaction. When Barnett's link between a teaching behavior and a student outcome failed to match the association each had already developed, each preservice teacher in this study questioned the validity of Barnett's argument, not the validity of their own previously constructed premise. They used their personal histories to "test" Barnett's principles and arguments. They did not use Barnett's principles and arguments to "test" their lay beliefs. The ways that these nine preservice teachers used their personal history-based beliefs formally document uses I have observed more informally across five years of working with preservice teacher education.

Personal history-based beliefs are powerful. The conclusions about "good" teaching that preservice teachers have reached via their own lived experiences have the character of a "fact," a "given," against which new, formal theories and principles are tested. As preservice teachers develop their emerging identities as teachers, they rely heavily on what they already know as students (Holt-Reynolds, 1990b). Personal history-based lay beliefs "instruct" this emerging teacher far more often than do research-based, formal, scientific theories. When the two voices of instruction disagree, the voice of personal experience clearly holds the advantage.

The Quality of Preservice Teachers' Lay Beliefs

The processes by which these preservice teachers used their personal histories to formulate practical arguments constitute one theme of their "debate" with Barnett about the value of lecturing. Their arguments are identical in character and share some striking themes in terms of quality as well. Each of the practical arguments presented above differs from Barnett's production argument because it rested on (a) a lay definition that differed from Barnett's, (b) a lay value that differed from Barnett's, or (c) a lay belief that was, in turn, based on inaccurate or insufficient data.

Differing definitions. The most obvious debate about definitions centered on the differences between Barnett's definitions of "active" and "passive" and the definitions that the preservice teachers held for those terms. Barnett's definitions were operationalized according to the formal, cognitive understanding of those terms. For Barnett, "active" meant participatory: engaged in the creation or construction of knowledge. These preservice teachers did not share that definition, but relied instead on a lay definition. They understood "active" to mean anything that was not clearly "passive." "Passive" they understood to mean "disengaged" or even "bored."

Therefore, when these preservice teachers listened to Barnett devalue lecturing on the grounds that students would not be active while teachers lecture, they disagreed. They maintained that students could well be disengaged, "passive," but only if they were bored. If students were thinking about the lecture while listening, then, they argued, the students would be "active."

Therefore, they saw little need to abandon the lecture format. Instead, they argued for modifying lectures to insure their levels of interestingness. This difference in definitions for critical terms cost Barnett his argument. Without confronting the differences between his research-based definitions and his students' lay definitions of terms, Barnett had little chance of successfully defending his argument. He faced a similar problem with the term "lecture" itself.

These preservice teachers simply rejected Barnett's definition of "lecture." They defined "lecture" quite narrowly and so, whether consciously or otherwise, they left forms of what Barnett would have labelled "lecturing" available to themselves. Therefore, when they expressed a reluctance to "lecture," these preservice teachers meant that they were reluctant to talk to students for 55 minutes without at least pausing to ask or answer questions. They defined formats that included questions as "discussions," not "lectures." Consequently, in their statements about the disadvantages of "lectures," they sometimes appeared to agree with Barnett even though they did not. The lack of agreement about the definitions of these critical terms served to mask the level of preservice teachers' rejection of Barnett's arguments.

In addition to these obvious differences in definitions of terms, other more subtle distinctions also thwarted the debate and preservice teachers' learning. Barnett and his students did not share a definition of "learning." The preservice teachers in this study talked about learning as if it were exclusively an issue of motivation. They returned repeatedly to the question of interestingness as central to every decision they made about every principle they encountered in the course. Their dominant theory was that students would learn if they were interested. Students would be active if they were interested. Students would read literature texts, work problem sets, and pay attention to lectures if they were interested.

These preservice teachers held no concept of learning that included the development and strategic use of cognitive skills: Barnett's definition. Consequently, when Barnett advocated teaching strategies that could foster students' development of independence as learners, these preservice teachers had no way to evaluate those strategies other than to anticipate their motivational potential. The criterion of interestingness which they applied

was inappropriate and not especially helpful for assessing the value of the strategies Barnett advocated.

Defining "learning" as exclusively an issue of motivation led these preservice teachers to dismiss strategies they might otherwise have come to value and to value strategies for inappropriate reasons. Several preservice teachers argued for the use of process-oriented strategies like writing-to-learn and peer-group discussions, not because these formats would encourage the active construction of knowledge but because they would be "a change of pace." Defining "learning" as a motivational event led preservice teachers to maintain the practical argument that instructional formats should be varied, not because some formats are more effective than others but because variation prevents students from becoming bored. They defended their potential use of lecturing alternatives by arguing that, since variation itself is valuable as a way to elicit interest, these alternatives would therefore be valuable.

Finally, these preservice teachers operated under a very different definition of "knowledge" than did Barnett. The epistemologies they brought with them did not match the epistemology his principles assumed. Principles associated with course work in content area reading assume that knowledge is constructed by learners. With the exception of Charlie, these preservice teachers assumed that knowledge is a thing to be transmitted intact to students. They saw textbooks as one source of that knowledge and themselves as another source. Only Charlie saw students themselves as sources. This distinction in assumptions is critical since the strategies Barnett advocated were designed to help students become skillful producers of knowledge rather than skillful receivers of knowledge. Unfortunately, neither Barnett nor these preservice teachers ever discussed, much less argued, this central issue. Each acted as if there were no difference between what each understood "knowledge" to be.

Unrecognized differences between preservice teachers' and teacher educators' definitions of critical terms and concepts results in each talking to the other as if there were no differences. In this case, a challenge to these preservice teachers' lay conceptualizations of knowledge and of learning would have made genuine exploration of strategies for achieving those conceptualizations possible. Unrecognized and thus unchallenged, differences between lay definitions and conceptions and more formal professional definitions and conceptions in effect sabotaged the debate. Both sides argued their case; neither side dealt with the argument presented by the other.

Differing values. One effect of unresolved differences between lay and professional definitions was that values based in those definitions also remained unresolved and undebated. Because these preservice teachers defined learning as an issue of motivation,

they valued interestingness. Because they defined knowledge as a body of information that could be transmitted, they valued teaching formats that would allow them to act as experts (i.e., as effective and efficient transmitters of that information).

One additional value that these preservice teachers maintained, however, was not a result of a differing definition of terms. The English majors in this study placed a high value on considering their students capable. All six of them agreed that students could read literature texts on some level without teacher help. They maintained that students could analyze text and relate literature themes to their own lives without instruction. They did not value teachers as mediators for students' deficient skills.

While Barnett did not argue this point directly, it is important to note that these English majors were reluctant, if not unable, to consider the possibility that their future students might be "deficient" in any way. Believing in the inherent abilities of their students was important to them. It was a value they brought to their study of teaching that, ironically, made understanding Barnett's emphasis on mediating text demands very difficult.

Inaccurate or insufficient data. The English majors radically overestimated the skills their students would bring to the reading of literature texts. The math majors believed that the teaching formats they had experienced as students were somehow necessary, given the structure of math as a subject matter. All nine believed that all students will be essentially like they were—choosing to learn based on whether they felt interested or not.

These differences stem from insufficient and, thus, inaccurate information about students and subject matter. When preservice teachers treat their own experiences as if these were prototypical and generalizable, they are bound to reach erroneous conclusions. Their data base is simply too small.

The belief that learning is a matter of motivation rather than a cognitive issue as expressed by these preservice teachers is an excellent case in point. Their experiences as learners, while varied, did not reflect a full range of student experiences. For the preservice teachers who populate teacher education courses, learning has probably actually been almost exclusively an issue of motivation. As successful learners, they are unlikely to be more than tacitly aware of how or when they developed learning skills. They do not realize that they are "special" cases. To face that possibility may well be uncomfortable for them because it risks feeling superior. I suspect that these nine preservice teachers would quite literally writhe in discomfort at the thought that they represent a rather elite, atypical group of learners. They appeared to need to believe that they were typical, average. By insisting on believing in their own lack of distinction, thus maintaining their value system which demands

that all learners are essentially equal and competent, they underestimated the need to develop reading, learning, or thinking skills with their students.

The math majors held views of what math classrooms could be like that were very different from those assumed by Barnett. Their belief that math is a subject that must inherently be told to students was based on the narrow, insufficiently varied experiences they had as students in math classrooms. Their personal histories led them to inaccurate beliefs.

It is uncomfortable to argue that any belief a preservice teacher has developed out of lived experience is "wrong." However, one logical consequence of working with personal history-based beliefs is that all personal histories constitute a sample of only one experience. It is not reasonable to expect that every conclusion based on the personal experiences of one individual will be appropriate to generalize to all students. Some of the beliefs that preservice teachers bring to their study of teaching will, in fact, be based on insufficient data and will, therefore, be invalid for generalizing to larger groups of students.

Conclusion: Principles Of A Pedagogy For Preservice Teachers

If we acknowledge the power of personal history-based, lay beliefs and conceptualizations about teaching, and if we accept these as coherent, cohesive, and therefore legitimate premises for practical arguments, we are, in effect, also suggesting that our role as teacher educators centers more nearly around fostering the professionalization of the lay belief-based practical arguments preservice teachers already possess rather than around focusing exclusively on the development of professional behaviors. Changing, challenging, enlarging, informing, and reforming the premises upon which preservice teachers base their arguments become our primary and legitimate concerns. If the arguments of these nine preservice teachers suggest nothing else, they suggest that rationales matter. They suggest that helping preservice teachers develop professional arguments and research-based attributions may be far more difficult and more critical than training young teachers to emulate professional, research-based behaviors.

Conceiving of our job as teacher educators as one of entering into dialogue with preservice teachers and so influencing the beliefs, premises, and arguments they will use to guide their practices implies the development of pedagogical practices that will (a) encourage preservice teachers to share the lay beliefs they currently use to guide their thinking, (b) identify differences between those beliefs and the principles we want to explore, (c) challenge preservice teachers to question the attributional links they have established between their reactions as students and behaviors of teachers, (d) expose both the strengths and the limitations of referencing personal experience as a data source, and

(e) respect as well as utilize the beliefs of preservice teachers as standards against which we too check our research-based principles.

To achieve these goals, we need vehicles that will invite preservice teachers to share their rationales and beliefs. Given the unequal distribution of power inherent to classrooms (Belenky, Clinchy, Goldberger, & Tarule, 1986), inviting "authentic" talk is, at the very least, a challenge (S. Hollingsworth, personal communication, February 6, 1991). As long as we pass out grades which reward "correct" performance or thinking, we will continue to tempt our students to manage our impression of what they believe and value rather than to change their prior beliefs (Shipman, 1967) whether they are conscious of it or not.

However, within the classroom structures currently available to us, we can alter the focus of the assignments we grade and the conversation we prompt. We can shift our attention to probing preservice teachers' rationales rather than their abilities to apply our rationales. We can craft assignments and activities which invite our students to explore arguments rather than to generate practical applications.

Perhaps in part because of the unequal distribution of power in our classrooms, preservice teachers are reluctant to identify areas where they disagree with us. Worse, they may well not even be aware of their own disagreement. We cannot depend on our students to challenge us with their dissenting or disagreeing voices. We must help them identify the points where they disagree. We must locate the differing definitions of terms, the differing values, and the moments when their arguments are based on insufficient data. We must, in effect, understand the implications of preservice teachers' practical arguments and then invite them to consider those implications with us.

When preservice teachers' arguments are based on definitions which differ from those we hope they will develop, those arguments have the potential to be maladaptive as guidelines for future practices. When their arguments are based on insufficient or inaccurate data, their arguments need to be challenged and modified. As teachers of those who hope to one day be teachers, our time will be well spent if we focus our attention on the attributions, arguments, and beliefs that guide the thinking of the teachers whose practices we hope to influence.

While we must certainly inform preservice teachers' beliefs about practice and about their future students as learners, we need to do so with some sense of caution. As frighteningly naive as many of the statements cited here seem, it is important to remember that these preservice teachers and others like them want to be teachers in part *because* they believe that students are capable; because they believe that students have not been given an adequate chance or excellent teaching; and because they believe that, through the force

of their own personalities and their own efforts to provide interesting, motivating experiences for students, they can make a difference to their students. Pieces of the beliefs cited here are intrinsic to preservice teachers' motivations to teach.

Whether students of teaching have a schema which we can tap and upon which we can build is not the question we must face as teachers of those who would study teaching. Instead, we need to puzzle over how best to overhear and then manage, expand, and sometimes counteract the unexamined, unidentified, and unquestioned assumptions about practice that preservice teachers have brought with them to their study.

We also need to be careful to preserve what is most valuable about those beliefs. Since the beliefs that preservice teachers bring with them are direct reflections of studenting experiences, they can act as powerful checks on the validity of the research-based principles we teach. Their lived experiences as students retain the personal and social features of classrooms that far too often our research-based principles have eliminated from the general store of professional knowledge. What scientific research carefully wipes away as a "contaminating" factor—like teacher personality effects—preservice teachers' lay beliefs return to the knowledge base. Their beliefs retain the personalities of teachers, the isolated events that with amazing frequency are validated by the personal histories of others in the class, the student-felt effects of teacher behaviors that miscalculated students' capabilities, ignored students' requests for help, or challenged students and interested them in classroom work. Based in their recent and still accessible histories as students, preservice teachers "know" something about the relationship of student engagement with material and student interest that our research has overlooked or obscured. Their knowledge is valuable.

When research-based principles claim to describe the effects of teaching behaviors on students, then the experiences that preservice teachers actually had as students ought to validate those principles. When preservice teachers dip into their personal history-based student data and reach very different conclusions, we might do well to reconsider our research base, its design and its agenda. Honestly exploring with preservice teachers the experiences that act as premises in their arguments can serve to help us check the validity of the principles we teach.

Preservice teachers' prior knowledge of "good" teaching is powerful and an important element with which we as teacher educators must contend. Until we develop ways to invite our students to share their lay beliefs and ways to understand the implications of those beliefs, we will fall short of actually practicing with them the very principles we are busy teaching.

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